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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/444,150	11/20/1999	KIRKPATRICK WILLIAM NORTON	PDNO-1099076	8281

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EXAMINER	
EBRAHIMI DEHKORDY, SAEID	
ART UNIT	PAPER NUMBER
2626	

DATE MAILED: 09/29/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/444,150	NORTON, KIRKPATRICK WILLIAM	
	Examiner	Art Unit	
	Saeid Ebrahimi-dehKordy	2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-20 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-20 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-6,8-10,12-14 and 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rademacher (U.S. patent 5,930,466) is view of Bender et al (U.S. patent 6,038,033)

Regarding claim1Rademacher discloses: A printer comprising a buffer for storing compressed swath data (please note column 18 lines 46-47 and also Abstract)
Rademacher does not disclose: the buffer having a storage capacity of Z bytes, where Z < Y and where Y is the number of bytes of uncompressed data representing a full swath and a printer controller for decompressing contents of the buffer.
On the other hand Bender et al disclose: the buffer having a storage capacity of Z bytes, where Z < Y and where Y is the number of bytes of uncompressed data representing a full swath (please note Fig.3 column 10 lines 23-67 and column 11 lines 1-9) and a printer controller for decompressing contents of the buffer (column 3 lines 27-35 where the compression and decompression are done by the microprocessor).

Therefore it would have been obvious to a person of ordinary skill in art at the time of the invention to modify Rademacher's invention according to the teaching of Bender

et al, Bender et al in the same filed of endeavor teaches the way the size of the buffer is determined for the maximum capacity for transmitting swath data to the buffer.

Regarding claim 2 Bender et al disclose: The printer of claim 1 the swath data being compressed at a target ratio of X: 1; wherein the buffer has a storage capacity of about YIX bytes (please note column 13 lines 55-67 and column 14 lines 1-16).

Regarding claims 3 and 13 Rademacher discloses: The printer of claim 1, further comprising a paper path and wherein the paper path is advanced by the height of the swath that was actually printed and wherein remaining rows are printed in a subsequent swath (please note column 12 lines 1-38).

Regarding claim 4 Rademacher discloses: The printer of claim 1, further comprising a paper path wherein the paper path is not advanced if all rows of a swath were not printed and wherein the entire swath is printed in at least two passes (please note column 1 lines 23-36)

Regarding claim 5 Rademacher discloses: The printer of claim 1, wherein the printer controller and the buffer are embedded in a single ASIC (please note Fig.1 items 38 and 46 and 36 column 8 lines 63-67 and column 9 lines 1-25)

Regarding claims 6 and 14 Rademacher discloses: The printer of claim 1, wherein each row of swath data is compressed independently of other rows of swath data, whereby the swath data is compressed one row at a time (please note column 12 lines 53-65).

Regarding claim 8 Rademacher discloses: A system comprising:

A host for generating compressed rows of swath data (please note column 6 lines 51-67 and column 7 lines 1-2)

However Rademacher dose not disclose: compression being performed at a target rate of X:1; and a printer for receiving the compressed rows of swath data from the printer, the printer including a swath buffer for storing the compressed rows, the buffer having a storage capacity of Z bytes, where Z is about YIX and where Y is the number of bytes of uncompressed rows representing a full swath.

On the other hand Bender et al disclose: compression being performed at a target rate of X: 1 (please note column 13 lines 55-67 and column 14 lines 1-16). and a printer for receiving the compressed rows of swath data from the printer (please note Fig.1 item 10 is the printer receiving compressed data for the host) the printer including a swath buffer (please note Fig.1 item 22 the input buffer Ram for storing the compress data) for storing the compressed rows the buffer having a storage capacity of Z bytes, where Z is about YIX and where Y is the number of bytes of uncompressed rows representing a full swath (please note Fig.3 column 10 lines 23-67 and column 11 lines 1-9).

Therefore it would have been obvious to a person of ordinary skill in art at the time of the invention to modify Rademacher's invention according to the teaching of Bender et al, Bender et al in the same filed of endeavor teaches the way the size of the buffer is determined for the maximum capacity for transmitting swath data to the buffer.

Regarding claim 9 Rademacher discloses: The system of claim 8, wherein the printer further includes a printer controller for decompressing contents of the swath

buffer (please note Fig.1 microprocessor 32) the printer controller and the swath buffer being embedded in a single ASIC (please note Fig.1 items 38 ASIC and items 36 and 32)

Regarding claim 10 Rademacher discloses: The system of claim 8, wherein the host includes a processor and a printer driver for causing the processor to compress as many complete rows of swath data as can fit in the swath buffer and causing the processor to output the compressed rows to the printer (please note column 6 lines 51-67 and column 7 lines 1-2).

Regarding claim 12 Rademacher discloses: The system of claim 8, the printer further including a paper path; wherein the paper path is advanced by the height of the swath that was actually printed (please note column 1 lines 36-67).

Regarding claim 16 Rademacher discloses: The method of claim 15, wherein no more than a maximum number of rows is transmitted to the printer; and wherein remaining rows of the swath are compressed and transmitted to the printer after the maximum number of rows has been transmitted and decompressed (please note Abstract where the data is being printed when the full data is decompressed).

Regarding claim 17 Bender et al discloses: The method of claim 15, further comprising the steps of monitoring the swath buffer to determine whether the swath buffer is full and, if the swath buffer is full stopping the transmission of compressed rows to the printer and allowing the printer to decompress the rows stored in the swath buffer (please note column 10 lines 54-67 and column 11 lines 1-5).

Regarding claim 18 Rademacher discloses: The method of claim 15, further comprising the step of advancing a sheet by the height of the swath that was actually printed (please note column1 lines 23-67).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 7,11,15,19 and 20 rejected under 35 U.S.C. 103(a) as being unpatentable over Rademacher (U.S. patent 5,930,466) in view of Bender et al (U.S. patent 6,038,033) and further in view of Ueda (U.S. patent 6,538,764)

Regarding claims 7 and 11 neither Rademacher nor Bender et al disclose: The printer of claim 1, wherein the printer controller monitors the swath buffer to determine whether the swath buffer is full and, if the swath buffer is full, outputs a message indicating that the swath buffer is full

On the other hand Ueda discloses: The printer of claim 1, wherein the printer controller monitors the swath buffer to determine whether the swath buffer is full and, if the swath buffer is full, outputs a message indicating that the swath buffer is full (please note column 49 lines 18-31 where the processor determines whether the buffer is full or not and reports the status of full buffer to the host computer).

Regarding claim 15 Ueda discloses: A method of using a printer to print a swath of an image, the method comprising the steps of: converting the image to a dot pattern (please note column 25 lines 58-67 and column 26 lines 1-8 also column 32 lines 22-34 and column 32 lines 61-67 and column33 lines 1-5) compressing complete rows of the dot pattern (please note column 32 lines 60-67 and column 33 lines 21-27)
Ueda does not disclose; transmitting compressed rows of the swath to the printer; using the printer to buffer the compressed rows; using the printer to decompress the buffered rows; and using the printer to print the swath according to the decompressed rows.
On the other hand Rademacher discloses: transmitting compressed rows of the swath to the printer (please note column 6 lines 51-67 and column 7 lines 1-2) using the printer to buffer the compressed rows (please note Fig.1 where the compressed data is sent to the printer 30 to be stored also note Abstract)
Using the printer to decompress the buffered rows (please note Abstract where the compressed data is being decompressed just before the printing) a using the printer to print the swath according to the decompressed rows (please note Abstract where the decompressed data is being printed just as soon as it becomes available).

Therefore it would have been obvious to a person of ordinary skill in art at the time of the invention to modify Ueda 's invention according to the teaching of Rademacher, Rademacher in the same filed of endeavor teaches the way compressed data is sent to the printer to get compressed and decompressed just before printing.

Regarding claim 19 Ueda discloses: The method of claim 15, wherein the dot pattern of the swath is compressed at a target rate; and wherein rows of the swath are

printed in multiple passes if the target rate of compression for that swath is not achieved (please note column 25 lines 57-67 and column 26 lines 1-9).

Regarding claim 20 Ueda discloses: A printer driver for a computer and a printer, the printer having a buffer, the driver comprising: data for causing the computer to generate a dot pattern from an image (please note column 32 lines 61-67 and column 33 lines 1-4 also column 37 lines 30-42)

However Ueda does not disclose: data for causing the processor to determine a number of complete compressed rows that can fit in the swath buffer; data for causing the computer to compress the complete rows that can fit in the swath buffer; and data for causing the computer to transmit the compressed rows to the printer.

On the other hand Redemacher discloses: data for causing the processor to determine a number of complete compressed rows that can fit in the swath buffer (please note Abstract where the size of the buffer is determined for compress and decompress data) data for causing the computer to compress the complete rows that can fit in the swath buffer (please note column 6 lines 51-67) and data for causing the computer to transmit the compressed rows to the printer (please note column 6 lines 51-67).

Other prior art cited

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Booth et al (U.S. Patent 6,247,786) is pertinent ad disclosing a dynamic pass buffer sizing.

Bolash et al (U.S. patent (5,970,221) is pertinent as disclosing a printer with reduced memory.

Gerstenberger (U.S. patent 6,222,636) is pertinent as disclosing a disk-based image storage system invention disclosure.

Contact Information

- Any inquiry concerning this communication or earlier communications from the examiner should be directed to *Saeid Ebrahimi-Dehkordy* whose telephone number is (703) 306-3487.

The examiner can normally be reached on Monday through Friday from 8:00 a.m. to 5:30 p.m. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward L Coles, can be reached at (703) 305-4712.

Any response to this action should be mailed to:

Assistant Commissioner for Patents
Washington, D.C. 20231

Or faxed to:

(703) 872-9314, or (703) 308-9052 (for ***formal*** communications; please mark
"EXPEDITED PROCEDURE")

Or:

(703) 306-5406 (for ***informal*** or ***draft*** communications, please label "PROPOSED" or "DRAFT")

Hand delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application should be directed to the Group Receptionist whose telephone number is (703) 305-4750.

Saeid Ebrahimi-Dehkordy
Patent Examiner
Group Art Unit 2622
June 26 2003

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